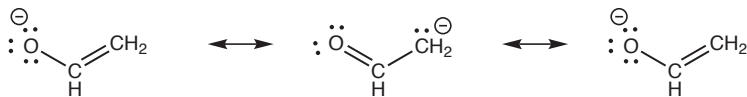
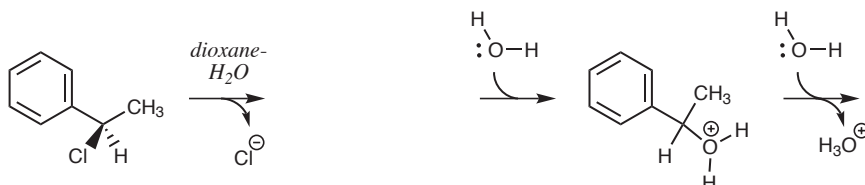
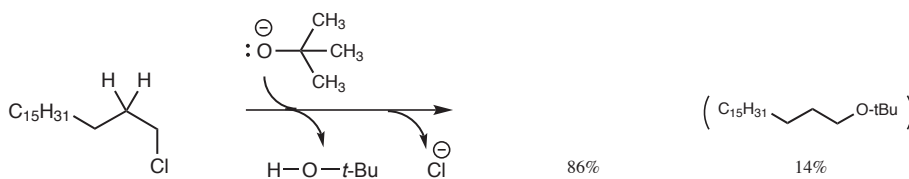
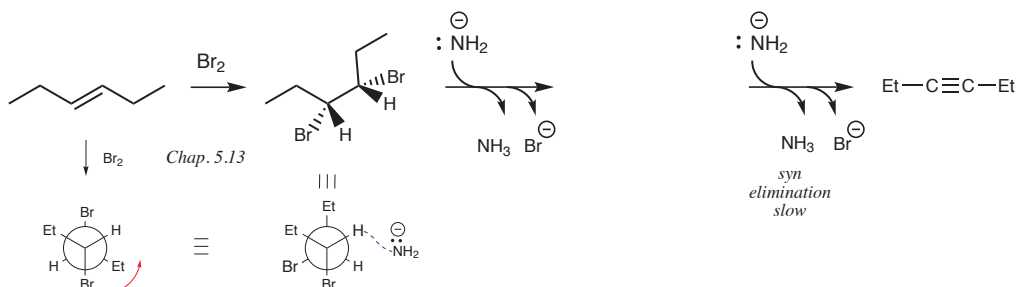
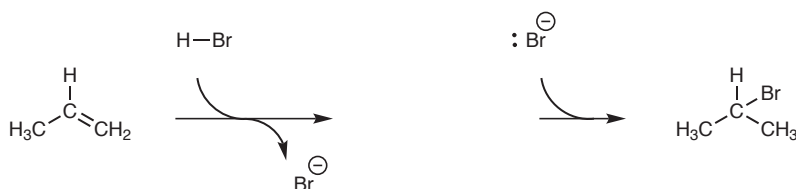
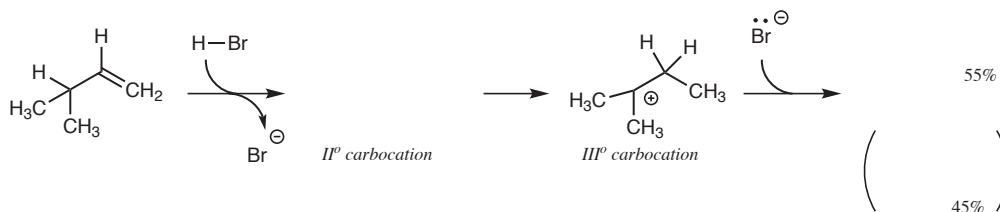
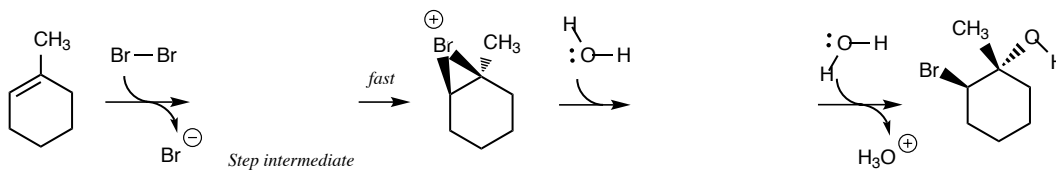


An ochem sampler. Print out these pages. Can you add the curved arrows and the missing structures? These are the same problems. If you understood which bonds were formed and broken, you will again arrive at the correct answers. Print out the next set and repeat those problems.

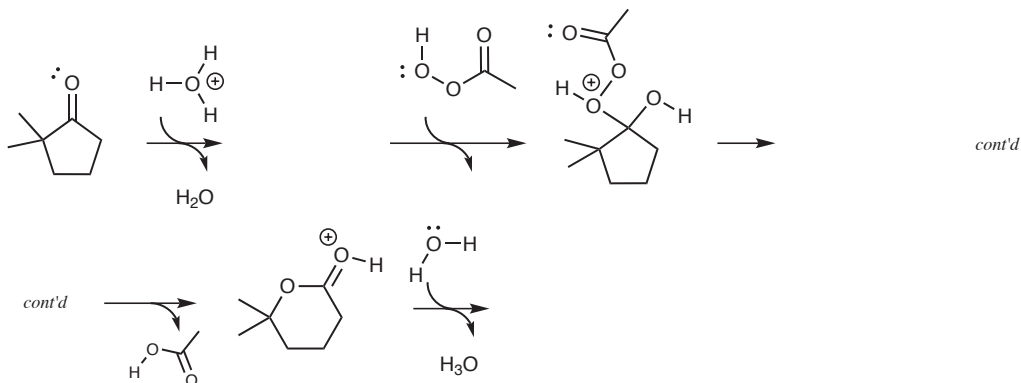
1.

2. An  $S_N1$  solvolysis reaction of (*R*)-1-chloroethylbenzene to give *rac*-1-phenylethanol.3. An  $E2$  elimination reaction of hydrogen chloride from 1-chlorooctadecane with potassium *t*-butoxide to give 1-octadecene. (See *Notes*.)4. A synthesis of 3-hexyne from *trans*-3-hexene by bromination and two elimination reactions. (See *Notes*.)5. Addition of hydrogen bromide to propene to give 2-bromopropane. (See *Notes*.)6. Addition of hydrogen bromide to 3-methyl-1-butene to give after rearrangement, 2-bromo-2-methylbutane. (See *Notes*.)

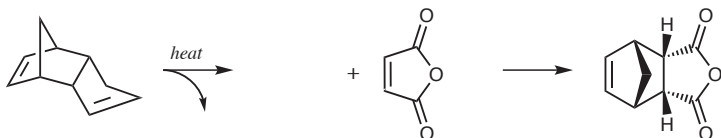
7. Bromination of methylcyclohexene to give (1*R*,2*R*)- and (1*S*,2*S*)-2-bromo-1-methylcyclohexanol.



8. Acid catalyzed Baeyer-Villiger oxidation of 2,2-dimethylcyclopentanone with peracetic acid.



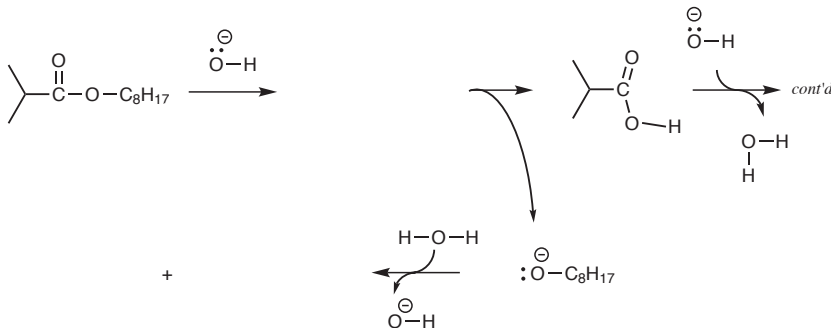
9. A reverse-forward Diels-Alder reaction between cyclopentadiene and maleic anhydride.



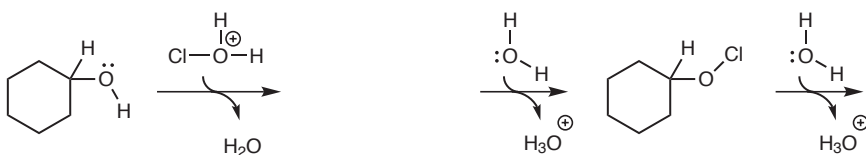
10. Formation of the cyanohydrin (2-hydroxy-2-methylpropanenitrile) from acetone. (See *Notes*.)



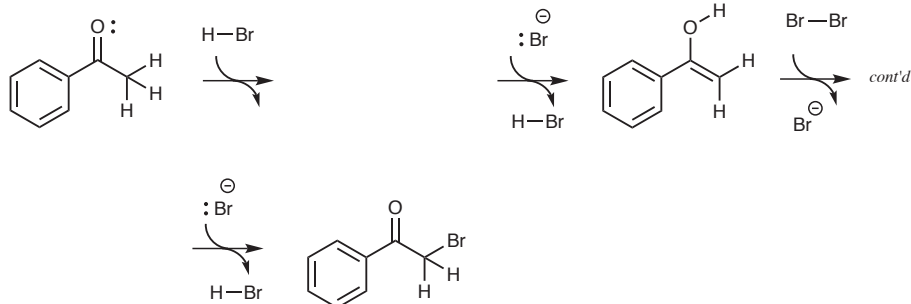
11. Base hydrolysis of octyl isobutyrate to give octanol and isobutyric acid. Step 1, treatment with base. (See *Notes*.)



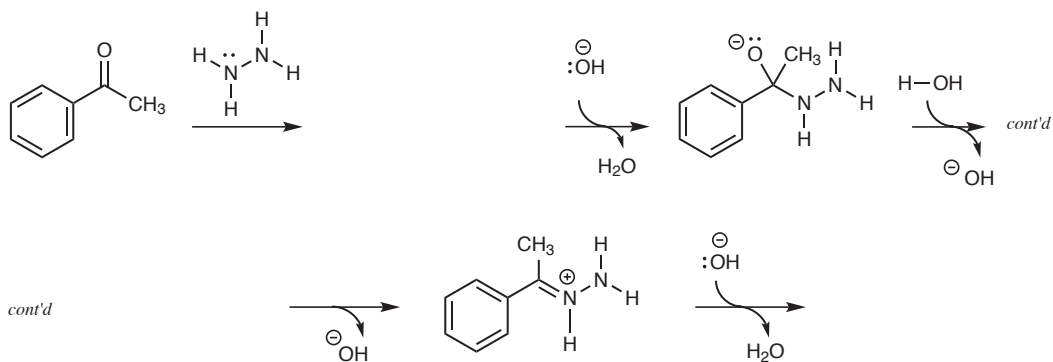
12. Oxidation of cyclohexanol to cyclohexanone with sodium hypochlorite (NaOCl, bleach).



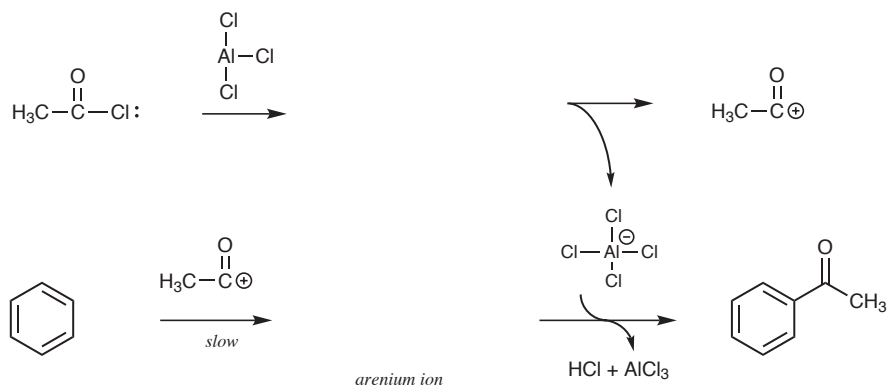
13. Acid catalyzed bromination of acetophenone to give  $\alpha$ -bromoacetophenone. (See *Notes*.)



14. Reaction of the ketone with hydrazine under basic conditions to form the hydrazone.



15. Friedel Crafts acylation of benzene.



16. Nucleophilic aromatic substitution of 1-fluoro-4-nitrobenzene with ammonia to give 4-nitroaniline. (See *Notes*.)

